The offshore renewables industry in Europe, and in particular offshore wind, has experienced large growth over the past decade and is projected to continue to grow significantly over the next 10 years. Due to advancements in design methods and turbine technology, the cost of developing offshore wind has plummeted over the past year, resulting in the world’s first subsidy-free offshore wind farm being announced by Dong Energy last month. This lecture will discuss the geotechnical challenges associated with renewable energy development offshore and focus on the three most common foundation types: monopiles, jacket structures and gravity based foundations. The lecture will discuss the governing design issues for each foundation type and show how recent research and the state of the art design principles are now being incorporated in practice.